

WHAT IS CLAIMED IS:

1 1. A virtual channel table for a broadcast protocol, comprising identification information
2 in a bit stream syntax thereof, said identification information identifying each channel as one
3 of an active and an inactive channel.

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1 2. The virtual channel table of claim 1, wherein said virtual channel table is included in a
2 program and system information protocol for a digital broadcast.

1 3. The virtual channel table of claim 2, wherein said digital broadcast is any one of a
2 digital terrestrial broadcast and a digital cable broadcast.

1 4. The virtual channel table of claim 1, wherein said identification information sets a
2 value of a program number field in the virtual channel table to "0" to indicate that a
3 corresponding channel is an inactive channel.

1 5. The virtual channel table of claim 1, wherein said identification information sets a
2 value of a number of elements field of a service location descriptor in the virtual channel
3 table to "0" to indicate that a corresponding channel is an inactive channel.

1 6. The virtual channel table of claim 1, wherein said identification information indicates
2 that a corresponding channel is an inactive channel whenever a service location descriptor is
3 not included in the virtual channel table.

1 7. The virtual channel table of claim 1, wherein said identification information assigns at
2 least one bit of a reserved field to indicate that a corresponding channel is an inactive
3 channel.

1 8. The virtual channel table of claim 7, wherein said reserved field is positioned in a
2 statement of a for_loop in a bit stream syntax of the virtual channel table.

1 9. The method of broadcasting using a virtual channel table in a broadcasting protocol,
2 said method comprising:

3 including identification information in the virtual channel table, said identification
4 information identifying a channel as being one of an active and an inactive channel, and
5 transmitting the virtual channel table; and

6 determining at a receiver whether the channel is inactive based upon the identification
7 information defined in the virtual channel table, by parsing the virtual channel table.

1 10. The method of claim 9, wherein including identification information further
2 comprises, when a channel is inactive, setting a value of a program number field in the virtual
3 channel table to "0" and inhibiting a service location descriptor from being transmitted
4 through the virtual channel table.

1 11. The method of claim 9, wherein including identification information further

- 2 comprises setting a value of the program number field and a value of a reserved field assigned
3 for recognizing an inactive channel in the parsed virtual channel table to "0."

1 12. The method of claim 9, wherein determining at the receiver whether the channel is
2 inactive comprises determining that the channel is inactive when a corresponding service
3 location descriptor is not received in the virtual channel table.

1 13. The method of claim 9, wherein determining at the receiver whether the channel is
2 inactive comprises determining that the channel is inactive when a value of a reserved field
3 assigned for recognizing an inactive channel in the parsed virtual channel table is "0."

1 14. The method of claim 9, wherein determining at the receiver whether the channel is
2 inactive comprises determining that the channel is inactive when a value of a program
3 number field in the virtual channel table is "0."

1 15. In a digital television receiver, a method of inhibiting display of an inactive channel,
2 comprising:
3 receiving a digital broadcast signal comprising a virtual channel table;
4 parsing the virtual channel table;
5 retrieving identification information from the parsed virtual channel table indicating
6 whether a channel is inactive; and
7 and, in response to said identification information indicating that the channel is

8 inactive, inhibiting display of said channel when said channel is selected by a user.

1 16. The method of claim 15, wherein retrieving the identification information comprises
2 reading a value of a reserved field for identifying an inactive channel in the parsed virtual
3 channel table.

1 17. The method of claim 15, wherein retrieving the identification information comprises
2 reading a value of a program number field in the parsed virtual channel table.

3 18. The method of claim 15, wherein retrieving the identification information comprises
4 determining whether a service location descriptor is found in the parsed virtual channel table.

5 19. In a digital broadcast transmitter, a method of indicating an inactive channel,
6 comprising:
7 generating a virtual channel table, including within the virtual channel table
8 information indicating the inactive channel; and
9 transmitting the virtual channel table as part of a digital broadcast signal.

1 20. The method of claim 19, wherein including within the virtual channel table
2 information indicating the inactive channel comprises setting a value of a program number
3 field in the virtual channel table to indicate the inactive channel.

1 21. The method of claim 19, wherein including within the virtual channel table
2 information indicating the inactive channel comprises assigning at least one bit of a reserved
3 field to indicate the inactive channel.

1 22. The method of claim 19, wherein including within the virtual channel table
2 information indicating the inactive channel comprises omitting a service location descriptor.

1 23. A digital television receiver, comprising:
2 receiving means for receiving a digital broadcast signal including a virtual channel
3 table, the virtual channel table including identification information identifying a channel as
4 being one of an active and an inactive channel;
5 detecting means for detecting the identification information in the virtual channel
6 table; and
7 inhibiting means for inhibiting display of the channel when the channel is selected by
8 the user and the channel is the inactive channel.

1 24. The digital television receiver of claim 23, wherein the virtual channel table is
2 included in a program and system information protocol for the digital broadcast signal.

1 25. The digital television receiver of claim 23, wherein the identification information has
2 a value of "0" in a program number field of the virtual channel table when the channel is the
3 inactive channel.

1 26. The digital television receiver of claim 23, wherein the identification information has
2 a value of "0" in a number of elements field of a service location descriptor in the virtual
3 channel table when the channel is the inactive channel.

1 27. A digital television (DTV) receiver, comprising:

2 receiving means for receiving a digital broadcast signal including a virtual channel
3 table, the virtual channel table including identification information identifying a channel as
4 being one of an active and an inactive channel;

5 a program and system information protocol (PSIP) decoder for detecting the
6 identification information in the virtual channel table and providing an output indicating
7 whether the channel is the inactive channel; and

8 a user interface module for receiving the output of the PSIP decoder and inhibiting
9 display of the channel when the channel is selected by the user and the channel is the inactive
10 channel.

1 28. The DTV receiver of claim 27, wherein the receiving means comprises:

2 demodulation means for demodulating the digital broadcast signal and outputting a
3 baseband signal; and

4 decoder means for decoding the baseband signal and providing a PSIP data stream to
5 the PSIP decoder.

1 30. The DTV receiver of claim 29, wherein the decoding means comprises a transport
2 decoder.